

Chapter 1: Computer—Hardware Components

A. Fill in the blanks.

1. _____ is a machine that can perform a variety of operations in accordance with a set of instructions called _____.
2. Monitor, keyboard and hard disk are physical components and thus, are _____.
3. Disk Operating System (DOS), Windows, Oracle and Tally are all _____.
4. The hardware parts that are installed within the CPU cabinet are called _____.
5. Sound cards are also known as _____.

B. State whether the following statements are True or False.

1. Computer works with an interaction of hardware and software.
2. Software refers to any physical component of a computer.
3. Hardware refers to the programs, which are required to operate the computer.
4. Motherboard, CPU, RAM, ROM and sound card are some examples of external hardware.
5. Read Only Memory (ROM) is used to store data and instructions during the execution of programs.

C. Match the columns.

Column A

1. Motherboard
2. Oracle
3. Optomechanical mouse
4. Projector
5. Digital versatile disk

Column B

- (a) External hardware
- (b) Internal hardware
- (c) Software
- (d) Storage device
- (e) Output device

D. Explain the following.

1. Motherboard
2. Video Card
3. Disk Drive
4. Switched Mode Power Supply
5. Digital Versatile Disk

E. Answer the following questions.

1. Write a note on MODEM.
2. What are ports? What are the different characteristics of ports?
3. What are the types of keys on a keyboard?
4. What is a scanner? What are the different types of scanners?
5. Discuss the different types of printers.



Answers to Worksheet

- A.** 1. Computer, program
2. hardware
3. software
4. internal hardware
5. audio adapters
- B.** 1. True 2. False 3. False 4. False 5. False
- C.** 1. (b) 2. (c) 3. (a) 4. (e) 5. (d)
- D.** 1. A motherboard is a sheet of plastic that holds all the circuitry to connect various components of a computer system. It is one of the most essential parts of a computer system. It holds together many crucial components of a computer, including the Central Processing Unit (CPU), memory and connectors for input and output devices. In addition to circuits, motherboard contains a number of sockets and slots to connect other components. All the activities related to the connected devices start and end in the motherboard.
2. A video card is also known as a graphics card. It is an expansion card connected to a motherboard that is used to generate the video output on a screen such as monitor and television. It enhances the quality of the displayed images, and contains its own processing and memory unit.
3. A disk drive enables the users to read, write, delete and modify data on a storage disk. It manages the input/output operations of the disk. It can be either external or inbuilt component of a disk. The most common type of disk drive is a hard drive, but several other types of disk drives exist as well. Some examples include removable storage devices, floppy drives and optical drives.
4. Switched Mode Power Supply (SMPS) is essential for safe running of power-consuming appliances. Switching power supplies have high efficiency and are widely used in a variety of electronic equipments, including computers and other sensitive equipments requiring stable and efficient power supply. It also contains inbuilt fans to release excessive heat generated during the computer use.
5. Digital versatile disk (DVD) is also called digital video disk. It is very similar to a CD but can store much more data. It is an optical disk storage device used for recording movies with high video and sound quality. Data can be recorded on a DVD on one or both sides. Its capacity ranges from 4.7 to 8.5 GB.
- E.** 1. The term MODEM is formed by combining the words MO-dulation and DEM-odulation. MODEM is a data communication equipment that translates the digital signals used by a computer into analog signals of the kind that travel by conventional telephone lines. The process of translating digital signals into analog signals is called modulation. A MODEM also converts the analog signals into digital signals at the receiving end of a computing device. The process which translates analog signals into digital signals is called demodulation. The basic function of a MODEM is to enable communication between various computers on a network (mainly Internet). There are mainly two types of MODEM: internal and external.

- An internal MODEM is a card that is installed into a slot within the CPU case of a computer. Internal modem is powered by the power supply of a computer.
 - An external MODEM is a box-shaped device that is connected to the serial port of a computer. It is so called as it is placed outside the computer. The external modem is powered by an external power adapter, connected to an electrical outlet.
2. A computer port is a connection between a computer and an external or internal device. Internal ports may connect devices such as hard drives and CD ROM or DVD drives. External ports may connect modems, printers, mouse and other devices.

A port has the following characteristics.

- External devices are connected to a computer using cables and ports.
- Ports are slots on the motherboard into which the cable of an external device is plugged in.

Computer ports have numerous functions and connectors of varying designs.

3. A keyboard consists of five types of keys.
- Typing keys: They consist of alphabet keys (A–Z), number keys (0–9), punctuation keys (? , > , < , etc.) and special symbols keys (& , # , etc.). These keys also include Caps Lock, Shift, Backspace, Enter, Spacebar and Tab keys.
 - Control keys: They can either be used alone or in combination with other keys to perform an action. Ctrl, Alt and Esc are some control keys.
 - Function keys: There are 12 keys that are present at the top row of the keyboard and are used to perform specific tasks. F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11 and F12 are the function keys.
 - Navigation keys: They are used to move through the document. Home, Insert, End and Arrow keys are the navigation keys.
 - Numeric keypad: It is placed at the right side of the keyboard. It consists of number key 0–9, arithmetic operators and the decimal point.
4. A scanner reads text, photographs or graphics from paper, which are then converted into bit patterns for processing, storage and output. Scanners are widely used for desktop publishing (DTP) and graphics applications. Generally there are three types of scanners: drum scanner, handheld scanner and flatbed scanner.
- Drum Scanner: A drum scanner is the one which uses a photomultiplier tube (PMT) to scan images. Photomultiplier tubes are vacuum tubes which are extremely sensitive to light. In drum scanners, the image is mounted on a glass tube. When the beam of light moves across the image, its reflection is picked up by the PMT and processed. Drum scanners are known for their high resolution and are used in the publishing industry. If they are not as popular, it is because of their cost and large size.
 - Handheld Scanner: A handheld scanner is a small manual scanning device which is moved over the object that needs to be scanned. In a handheld scanner, you have to drag the scanner over the document that is to be scanned. Even a slight movement of the hand can lead to distortion of the image. One of the most-utilised handheld scanner is the barcode scanner, typically used in shopping stores to value goods.
 - Flatbed Scanner: A flatbed scanner derives its name from the fact that its glass plane or bed, where the object to be scanned is placed, is flat. A flatbed scanner is made up of a glass pane and a moving optical CIS or CCD array. The image, the one that is to be scanned, is placed on the glass pane. The sensor and source of light move across the glass pane to

scan the document and produce its digital copy. It is a popular desktop scanner. It is used in homes, schools and offices.

5. A printer is an output device that allows us to print our work on paper. There are mainly three types of printers on the basis of print method or print technology which are very popular nowadays.
 - Dot Matrix Printer: A dot matrix printer works like a typewriter. The printer head strikes the paper and the ink ribbon to print characters. It is also called the impact printer. This printer is slow and noisy but economical, reliable and durable.
 - Inkjet Printer: Inkjet printer is also called a non-impact printer because there is no contact between the printer head and the paper. Printing is done line by line by spraying ink on a sheet of paper. These printers are much faster than the dot matrix printers. They are more expensive and consume more ink. Ink cartridges are used in inkjet printers.
 - Laser Printer: Laser printer is a non-impact printer that uses laser beams to print on paper. These printers are much faster than inkjet printers and the print quality is much superior. However, they are expensive and are mainly used in places where fine quality printing is required.



Chapter 2: Number System

A. Fill in the blanks.

1. Decimal number system is the most commonly used _____.
2. The positional value of each digit increases as we move from _____.
3. The language understood by a computer is the _____ language.
4. The base of octal number system is _____.
5. The _____ system consists of 16 digits and has a base of 16.

B. State whether the following statements are True or False.

1. The rightmost digit of a number is called the most significant digit.
2. The binary number system consists of two digits, i.e., 0 and 1.
3. Some examples of octal number system are 57A and 45D.
4. Binary addition is not similar to addition of decimal numbers.
5. In Binary addition, if the sum of two numbers exceeds 1, a carryover is generated.

C. Match the columns.

Column A	Column B
1. Binary Number System	(a) $(25)_{10}$
2. Octal Number System	(b) $(4D2)_{16}$
3. Hexadecimal Number System	(c) $(345)_8$
4. Decimal Number System	(d) $(11001)_2$

D. Explain the following.

1. Decimal Number System
2. Binary Number System
3. Octal Number System
4. Hexadecimal Number System

E. Answer the following questions.

1. Write the steps to convert Decimal Number System into Binary Number System.
2. Write the steps to convert Binary Number System into Decimal Number System.
3. Write the steps to convert Octal Number System into Decimal Number System.
4. Write the steps to convert Hexadecimal Number System into Decimal Number System.



Chapter 3: Computer Virus

A. Fill in the blanks.

1. A _____ is a computer program that attacks a computer.
2. A _____ appears in different forms.
3. A _____ is designed to change the location of the infected file.
4. _____ programs check the files on your computer to detect the viruses and also remove them.
5. A virus cannot infect computer _____. It can only infect computer _____.

B. State whether the following statements are True or False.

1. A hard disk or hard drive consists of smaller sections known as sectors.
2. Malware is made up of two words: malicious and software.
3. Spyware is not difficult to detect.
4. Virus cannot infect files which are written on a protected disk like CD-ROM.
5. When you insert a CD or a pen drive in your system, always scan it before opening.

C. Match the columns.

Column A

1. Boot Sector Viruses
2. Trojan Horse
3. Program File Virus
4. Worm
5. Polymorphic Virus

Column B

- (a) Sunday
- (b) Michelangelo
- (c) Marburg
- (d) Backdoor
- (e) Stone virus

D. Choose the correct answer.

1. Which of the following does the word Virus stand for?
(a) Vital Information Resources Under Seize
(b) Vital Information Rescue Under Seize
(c) Vital Informal Resources Under Seize
(d) Visual Information Resources Under Seize
2. Which of the following is a boot sector virus?
(a) Sunday (b) Backdoor (c) Stone virus (d) Michelangelo
3. Which of the following is a worm?
(a) Sunday (b) Backdoor (c) Stone virus (d) Michelangelo
4. Which of the following is a polymorphic virus?
(a) Sunday (b) Marburg (c) Stone virus (d) Michelangelo
5. Which of the following is a network virus?
(a) SQL Scanner (b) Elkern (c) Stone virus (d) Michelangelo

E. Answer the following questions.

1. What is Sweeper?
2. Write a note on Trojan Horse.
3. What are the symptoms of a virus?
4. How does a computer gets affected by virus?
5. What is the impact of a virus on a computer?



Answers to Worksheet

- A.** 1. computer virus
3. directory virus
5. hardware, software
2. polymorphic virus
4. Antivirus
- B.** 1. True 2. True 3. False 4. True 5. False
- C.** 1. (e) 2. (d) 3. (a) 4. (b) 5. (c)
- D.** 1. (a) 2. (c) 3. (d) 4. (b) 5. (a)
- E.** 1. Sweeper is a virus that looks like an antivirus program. This tricks the user into downloading it. The virus then installs malicious code on the computer by making use of Google services. The makers of Sweeper created this program as a way to blackmail computer users into disclosing their credit card information. Once installed, it creates fake malware files on the computer, which get started when the user logs into the system. It manages the browsing activity of the user. When it is run, the virus finishes its fake system scan and reports about fake viruses. The user should follow the steps properly to remove this malicious code.
2. The name Trojan horse is derived from the wooden horse that was used by the Greek army to conquer the city of Troy. Trojan horse is a computer program that tricks the user by acting as an original file. This virus does not replicate itself and is designed to perform targeted activities. When the user opens the file, the virus starts the program automatically and begins to infect the system. It tends to act discretely and creates backdoors in your security to let other malware in. A Trojan horse does not replicate, but it does a lot of damage to your computer every time you open and run it, like changing the desktop by adding desktop icons of its own.
3. Following are the symptoms that indicate that a computer is infected by a virus.
- Computer's hard disk is filled up by the virus as the virus copies itself endless times.
 - Computer shuts down and restarts automatically.
 - Speed of the computer is reduced.
 - Unexpected error message pop-ups are displayed.
 - Certain files, folders or drives become inaccessible.
 - Computer starts doing many things on its own like moving the cursor, and opening and closing of certain files.
4. Some of the ways in which a computer gets infected with a virus are as follows.
- By using infected CDs or pen drives
 - Through e-mail attachments
 - Through files download from the Internet
 - Starting an infected application as it infects other running applications
5. A virus can affect the computer in the following ways.
- It can irritate the computer users.
 - It fills up the disk space of a computer by copying itself endless times.
 - It can modify or corrupt important files.
 - It can infect data files stored in a computer.
 - It can infect the executable program files like Microsoft Word and operating system.



Chapter 4: Ethics and Safety Measures in Computing

A. Fill in the blanks.

1. The Internet is also called a global _____.
2. A _____ helps to access the desired information from the Internet.
3. The _____ is the best medium to communicate with people living at far off places.
4. _____ refers to buying and selling of various products online.
5. E-mail is the fastest and cheapest means of _____.

B. State whether the following statements are True or False.

1. Search engine makes searching an easy task.
2. The Internet provides services like e-mails, chat programs, instant messaging and video-conferencing.
3. The Internet cannot be used to book air, railway and bus tickets.
4. Most of the service providers offer e-mail account for a cost.
5. Spams are unwanted mails that are received in bulk from known sources.

C. Match the columns.

Column A

1. E-mail
2. Spams
3. Software piracy
4. Trademark
5. Firewall

Column B

- (a) Name or symbol that a company uses
- (b) Network security system
- (c) www.rediff mail.com
- (d) Illegal copying of software for sale
- (e) Unwanted mails

D. Choose the correct answer.

1. Which of the following refers to the use of another person's ideas and pretend that it is your own?
(a) Plagiarism (b) Spamming (c) Copyright (d) Hacking
2. Which of the following is using digital communication tools to make a person feel angry, sad or scared, usually again and again?
(a) Bullying (b) Spamming (c) Cyberbullying (d) Hacking
3. Which of the following is a cybercrime where an e-mail is sent to a person misguiding him/her to believe that it is from a trusted organisation?
(a) Plagiarism (b) Phishing (c) Cyberbullying (d) Hacking
4. Which of the following are unwanted mails that are received in bulk from unknown sources?
(a) Phishing (b) Spam (c) Cyberbullying (d) Hacking

E. Answer the following questions.

1. What are ethics? List a few computer ethics.
2. Name a few unethical practices.
3. What are the guidelines to prevent plagiarism?
4. What are the safety measure one should follow while using computer and Internet?
5. What is a digital footprint? What are the types of digital footprint?



Answers to Worksheet

- A.** 1. network of computers
2. search engine
3. Internet
4. E-commerce
5. communication
- B.** 1. True 2. True 3. False 4. False 5. False
- C.** 1. (c) 2. (e) 3. (d) 4. (a) 5. (b)
- D.** 1. (a) 2. (c) 3. (b) 4. (b)
- E.** 1. Standard of moral conduct that governs the behaviour of an individual is called ethics. Ethics are required to maintain the system security. Unethical acts are not always illegal, but they cause harm to the security. Some of the computer ethics that should be followed by the users are stated here.
- Do not spy on other person's computer.
 - Do not use others' computers without their consent.
 - Avoid using pirated software. Always pay for software unless it is freely available.
 - Be respectful to others while communicating with them on the Internet.
 - Do not steal anyone's information. If you are using someone else's information, do not forget to acknowledge them.
 - Do not contribute in spreading wrong information.
2. A few unethical practices are as follows.
- Plagiarism refers to the use of another person's ideas or a part of their copyright work and pretend that it is your own.
 - Cyberbullying is the use of digital communication tools (such as the Internet) to make other person feel angry, sad or scared, usually again and again.
 - Phishing is a cybercrime where an e-mail is sent to a person misguiding him/her to believe that it is from a trusted organisation.
 - Spams are unwanted mails that are received in bulk from unknown sources.
3. Following are the guidelines to prevent plagiarism.
- The easiest way to prevent plagiarism is 'citation'. The word citation means to acknowledge the original writer from where the content is being taken.
 - If someone's copyrighted material is being taken, then try to edit it as much as possible.
 - Use quotation marks around the quoted words to prevent plagiarism.
 - Taking content from the original source gives more strength to your material, but still try to bring out the originality.
4. Let's learn about some safety measures while using computer and Internet.
- Make sure that the information provided by you is true in every aspect. However, do not share your personal information like your address and telephone number without your parents' permission.

- Always be yourself while doing any kind of online activity. Do not fake in anyway. Avoid using fake e-mail IDs.
 - Never agree to meet an online friend alone. If you have to meet a person, take an adult with you and arrange a meeting at a public place like a park or mall.
 - Never open e-mails from unknown people or addresses. They may contain computer viruses that can cause your computer to malfunction and you may lose valuable data.
 - Remember that not all information available on the Internet is correct. So, cross-check it with multiple sources before using this information.
 - Always make a regular backup of your data to avoid data loss.
 - Always keep the antivirus updated in your system.
 - Make use of Firewall as a security system in your computer. A firewall actually establishes a barrier between a trusted internal network and untrusted external network, such as the Internet.
 - Always keep a strong password with a combination of alphabet, numbers and symbols. Always keep your password confidential and keep changing it frequently.
5. A digital footprint is the information/impression about an person on the Internet due to his/her online activity. It includes the websites you visit, e-mails you send and the information you submit to online services. Digital footprints are of two types: active digital footprint and passive digital footprint.
- Active Digital Footprint: It includes data that you intentionally submit online. Sending an e-mail leads to active digital footprint, since the data can be seen or saved by another person. The more e-mails you send, the more your digital footprint grows.
 - Passive Digital Footprint: It refers to the data left by the user online unintentionally. For example, when you visit a website, the web server logs your IP address, which identifies your Internet service provider and your location. A more personal aspect of your passive digital footprint is your search history, which is saved by the search engines while you are logged in.